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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Patrick Pichat

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EXAMINER

EIDE, HEIDI MARIE

ART UNIT

PAPER NUMBER

3732

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DELIVERY MODE

10/19/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/564,043	Applicant(s) PICHAT ET AL.	
	Examiner HEIDI M. EIDE	Art Unit 3732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 23-29 is/are pending in the application.
- 4a) Of the above claim(s) 4-9 and 14-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 10-13, 17-21 and 23-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/26/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on June 26, 2009 is noted. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 20 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant has amended claim 1 to include the limitation of the outer peripheral surfaces of the tubes being disposed adjacent to each other. The original specification does not have support for the added limitations of claim 1 in combination with the limitation of fluid discharge nozzle being concentrically arranged to the discharge nozzle for the air-power mixture.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 13, 17-19 and 27-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the

Art Unit: 3732

subject matter which applicant regards as the invention. Claims 13 and 27-28 recites the limitation of the tube, however, it is not clear if it is the first tube or the second tube as claimed in claim 1. For examination purposes, it has been interpreted as the first tube.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 13 and 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Felix et al. 5,792,098 (Felix).

Felix discloses a nozzle piece capable of being adapted to a dental powder jet apparatus adapted for an exchangeable assembly on a handpiece and having a discharge nozzle for a fluid 64 as well as a discharge nozzle capable of discharging a mixture of air and a dental powder 60 suitable for cleaning teeth in the area of a gum pocket, wherein a front partial length of an outlet cross section of the discharge nozzle capable of discharging the air-powder mixture projects from a grip of the nozzle piece connected to the hand piece (fig. 1), wherein the front partial length is formed as a first tube 38 having a longitudinal axis and an outer peripheral surface and is provided with plural nozzle openings 62 nozzle opening at least in the outer peripheral surface (figs. 2-3), wherein the discharge nozzle for the fluid is formed as a second tube 40 having a second longitudinal axis, wherein a mouth of the discharge nozzle for the fluid is axially

Art Unit: 3732

displaced backwards with respect to the discharge nozzle capable of discharging the air-powder mixture (fig. 4) and wherein the longitudinal axis of the second tube of the fluid discharge nozzle is displaced laterally toward one side from the longitudinal axis of the first tube of the discharge nozzle for the air-powder mixture and the second tube has an outer peripheral surface that is disposed adjacent the outer peripheral surface of the first tube (figs. 3-4). Felix further teaches the nozzle openings are arranged in a common radial plane of the tube and are spaced in regular distances (fig. 3), the front end of the tube is provided with an axial nozzle opening (fig. 3), the tube is capable of being a single use product exchangeably mounted on the grip (figs. 1, 4) and the tube is held by a holding piece 36 which is capable of being rotatable relative to the grip (fig. 1). Felix does not specifically teach the apparatus functioning as claimed, however, the nozzle taught by Felix is capable of functioning as claimed, such that the nozzle is attached to a dental handpiece for delivering liquid and a mixture solution to the gum area, therefore the claimed limitations are met.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 13, 20-21, 23, 25 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharp et al. 6,457,974 (Sharp) in view of Ito et al. 2001/0031441 (Ito) in view of Maita et al. 4,993,941 (Maita).

Sharp teaches a nozzle piece for a dental powder jet apparatus adapted for an exchangeable assembly on a handpiece and having a discharge nozzle for a fluid as well as a discharge nozzle for discharging a mixture of air and a dental powder suitable for cleaning teeth in the area of a gum pocket, wherein a front partial length of an outlet cross section of the discharge nozzle for the air-powder mixture projects from a grip of the nozzle piece connected to the hand piece (figs. 1 and 6a), wherein the front partial length is formed as a first tube 57 having a longitudinal axis and an outer peripheral surface and is provided with a nozzle opening, wherein the discharge nozzle for the fluid is formed as a second tube 58 having a second longitudinal axis, wherein the longitudinal axis of the second tube of the fluid discharge nozzle is displaced laterally toward one side from the longitudinal axis of the first tube of the discharge nozzle for the air-powder mixture and the second tube has an outer peripheral surface that is disposed adjacent the outer peripheral surface of the first tube (fig. 6a). Sharp teaches the invention as substantially claimed and discussed above, however, does not teach the first tube is provided with plural nozzle openings at least in the outer peripheral surface and a mouth of the discharge nozzle for the fluid is axially displaced backwards with respect to the discharge nozzle for the air-powder mixture.

Ito teaches a mouth 16c of the discharge nozzle for the fluid is axially displaced backwards with respect to the discharge nozzle 17b for the air-powder mixture (fig. 4A).

Art Unit: 3732

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Sharp with the placement of the fluid nozzle as taught by Ito as a matter of obvious design choice in order to direct that solutions in a desired manner onto the surface as taught by Ito (par. 49, 61, 65). Sharp/Ito teaches the invention as substantially claimed and discussed above, however, does not teach the first tube is provided with plural nozzle openings at least in the outer peripheral surface.

Maita teaches a tube is provided with plural nozzle openings at least in the outer peripheral surface (fig. 1). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Sharp/Ito with the nozzle openings as taught by Maita in order to apply the solution in different directions and enhance the effect of the procedure as taught by Maita (col. 2, ll. 15-19, 40-44).

Sharp further teaches a front end of the tube is provided with an axial nozzle opening as illustrated in fig. 6a, wherein the tube is capable of being a single use product exchangeably mounted on the grip and wherein the tube is held by a holding piece 12 which is capable of being rotated relative to the grip (fig. 1).

Sharp teaches the invention as substantially claimed and discussed above, however, does not specifically teach the fluid discharge nozzle is concentrically arranged to the discharge nozzle for the air-powder mixture and the fluid discharge nozzle is provided with a diffuser shaped outlet cross section, the nozzle openings are arranged in at least two different radial planes of the tube and in that the nozzle openings in one radial plane are twisted with respect to the nozzle openings in the other radial plane in the circumferential direction of the tube, the tube shaped front partial

Art Unit: 3732

length of the nozzle is made of a material behaving atraumatically in particular of plastic and the tube shaped front partial length of the nozzle piece has an arched shape ending at the nozzle openings of the discharge nozzle.

Ito teaches the fluid discharge nozzle is concentrically arranged to the discharge nozzle for the air-powder mixture (fig. 4B) and the fluid discharge nozzle is provided with a diffuser shaped outlet cross section (fig. 5). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Sharp with the arrangement of the nozzles and outlet cross section as taught by Ito as a matter of obvious design choice in order to direct that solutions in a desired manner onto the surface as taught by Ito (par. 49, 61, 65). Sharp/Ito teaches the invention as substantially claimed and discussed above, however, does not specifically teach that the nozzle openings are arranged in at least two different radial planes of the tube and in that the nozzle openings in one radial plane are twisted with respect to the nozzle openings in the other radial plane in the circumferential direction of the tube, the tube shaped front partial length of the nozzle is made of a material behaving atraumatically in particular of plastic and the tube shaped front partial length of the nozzle piece has an arched shape ending at the nozzle openings of the discharge nozzle. .

Maita teaches the nozzle openings are arranged in at least two different radial planes of the tube and in that the nozzle openings in one radial plane are twisted with respect to the nozzle openings in the other radial plane in the circumferential direction of the tube (fig. 1) and the tube shaped front partial length of the nozzle piece has an arched shape ending at the nozzle openings of the discharge nozzle (fig. 2) and the

Art Unit: 3732

tube being made of a plastic material capable of behaving atraumatically (col. 2, ll. 12-14). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Sharp/Ito with the nozzle openings as taught by Maita in order to apply the solution in different directions and enhance the effect of the procedure as taught by Maita (col. 2, ll. 15-19, 40-44).

Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharp et al. 6,457,974 (Sharp) in view of Ito et al. 2001/0031441 (Ito) in view of Maita et al. 4,993,941 (Maita) as applied to claim 1 above, and further in view of Nance 6,638,064.

Sharp/Ito/Maita teaches the invention as substantially claimed and discussed above, however, does not specifically teach the nozzle openings are arranged in a common radial plane of the tube and are spaced in regular distances or in varying distances along the corresponding circumferences of the tube and in the radial plane there are at least three nozzle opening disposed along the circumference of the tube.

Nance teaches the nozzle openings are arranged in a common radial plane of the tube and are spaced in regular distances or in varying distances along the corresponding circumferences of the tube and in the radial plane there are at least three nozzle opening disposed along the circumference of the tube (figs. 6-7). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Sharp/Ito/Maita with the arrangement of the openings taught by Nance as a matter of obvious design choice since it has been held that the rearrangement and duplication of

Art Unit: 3732

parts of a claimed element require general skill in the art (*In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) MPEP 2144.04 VI B, *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) MPEP 2144.04 IV C).

Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharp et al. 6,457,974 (Sharp) in view of Ito et al. 2001/0031441 (Ito) in view of Maita et al. 4,993,941 (Maita) as applied to claim 1 above, and further in view of Malmin 4,276,880.

Sharp/Ito/Maita teaches the invention as substantially claimed and discussed above, however, does not specifically teach the nozzle openings are elongated or slot shaped and characterized in that a defined longitudinal axis of the slot shaped nozzle openings is parallel to the main axis of the tube.

Malmin teaches the nozzle openings are elongated and characterized in that a defined longitudinal axis of the slot shaped nozzle openings is parallel to the main axis of the tube (fig. 5). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Sharp/Ito/Maita with the shape of the openings since it has been held that the configuration of the claimed opening was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed opening was significant. (*In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) MPEP 2144.04 IV B).

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sharp et al. 6,457,974 (Sharp) in view of Ito et al. 2001/0031441 (Ito) in view of Maita et al. 4,993,941 (Maita) as applied to claim 13 above, and further in view of Bailly et al. 5,336,202 (Bailly).

Sharp/Ito/Maita teaches the invention as substantially claimed and discussed above, however, does not specifically teach the axial nozzle opening is asymmetrically formed in order to deflect the discharged air-powder mixture jet from the axis of the tube.

Bailly teaches the axial nozzle opening is asymmetrically formed in order to deflect the discharged solution from the axis of the tube (col. 4, ll. 34-29). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Sharp/Ito/Maita with the asymmetrical opening as taught by Bailly in order to direct the solution from the tube in the direction of the second tube in order to ensure mixture (fig. 1).

Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharp et al. 6,457,974 (Sharp) in view of Ito et al. 2001/0031441 (Ito) in view of Maita et al. 4,993,941 (Maita) as applied to claim 13 above, and further in view of Maurer et al. 2,709,852 (Maurer).

Sharp/Ito/Maita teaches the invention as substantially claimed and discussed above, however, does not specifically teach a deflection body is provided at the axial nozzle opening, the deflection body directing the discharge air-powder mixture against

Art Unit: 3732

the treated tooth surface and wherein the deflection body is interchangeably mounted on the tube.

Maurer teaches a deflection body is provided at the axial nozzle opening, the deflection body directing the discharge air-powder mixture against the treated tooth surface and wherein the deflection body is interchangeably mounted on the tube (figs. 1-2, col. 3, ll. 46-54). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Sharp/Ito/Maita with the deflection body as taught by Maurer in order to indicate the path of the solution as taught by Maurer (col. 3, ll. 46-54).

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sharp et al. 6,457,974 (Sharp) in view of Ito et al. 2001/0031441 (Ito) in view of Maita et al. 4,993,941 (Maita) as applied to claim 1 above, and further in view of Heil 4,340,366.

Sharp/Ito/Maita teaches the invention as substantially claimed and discussed above, however, does not specifically teach the nozzle piece has an oval to elliptic cross section.

Heil teaches the nozzle piece having an oval cross section (col. 1, ll. 60-64).). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Sharp/Ito/Maita with the oval cross section as taught by Heil since it has been held that the configuration of the claimed opening was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed opening was significant. (*In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) MPEP 2144.04 IV B).

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sharp et al. 6,457,974 (Sharp) in view of Ito et al. 2001/0031441 (Ito) in view of Maita et al. 4,993,941 (Maita) as applied to claim 1 above, and further in view of Linder 5,188,617.

Sharp/Ito/Maita teaches the invention as substantially claimed and discussed above, however does not teach at least one of a scale and a color partitioning for marking the position of the nozzle opening relative to the main axis of the hand piece is provided on the tube shaped front partial length of the nozzle piece.

Linder teaches a scale 19 on the tube shaped front partial length 17 of the nozzle piece 4. It would have been obvious to one having ordinary skill in the art to modify Sharp/Ito/Maita with the scale as taught by Linder in order to measure a distance as taught by Linder (col. 3, l. 42).

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sierro et al. 6,837,709 (Sierro) in view of Malmin 4,276,880.

Sierro teaches a nozzle piece 2 for a dental powder jet apparatus adapted for an exchangeable assembly on a hand piece (col. 2, ll. 60-32) for discharging a mixture of air and a dental powder (col. 3, ll. 6-9) suitable for cleaning teeth in the area of a gum pocket as well as a discharge nozzle 7 for a fluid (col. 3, ll. 15-16). The front partial length is formed as a tube having an outer peripheral surface and is provided with nozzle openings (col. 3, ll. 21-22). The mouth of the discharge nozzle for the fluid is axially displaced backwards with respect to the discharge for the air-powder mixture as

Art Unit: 3732

illustrated in fig. 2. Sierro teaches the invention as substantially claimed and discussed above, however, does not specifically teach the nozzle openings are in the outer peripheral surface.

Malmin teaches the nozzle openings are in the outer peripheral surface (fig. 3). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Sierro with the openings as taught by Malmin in order to more effectively scrub and remove dentinal debris as taught by Malmin (col. 4, ll. 31-37)

Response to Arguments

Applicant's arguments filed July 20, 2009 have been fully considered but they are not persuasive. Regarding applicants arguments directed towards claim 29, the applicant argues that it would not have been obvious to one having ordinary skill in the art at the time of the invention to modify Sierro in view of Malmin. Applicant argues that the combination of these two references are based on hindsight, however, the placement of the openings in the tubes is known to be an obvious matter of design choice in order to control the location that the solution exiting the holes is applied. In this case by placing the holes on the side of the tube, the surrounding area of the gum can be treated more effectively, rather than just the bottom of the gum. Applicant further argues that Malmin does not teach the nozzle piece as claimed, however, the limitations of the nozzle piece having two different nozzles is met by Sierro therefore these arguments are moot. Regarding applicant's argument that the tube 7 would block a plurality of openings added to the tube 6 taught by Sierro, is not persuasive. As

Art Unit: 3732

illustrated in figs. 2-3 of Sierro, tube 6 extends beyond tube 7; therefore the added holes located at the end of tube 6 would not be blocked by tube 7.

Applicant's arguments with respect to claims 1-3, 10-13, 17-21 and 23-28 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HEIDI M. EIDE whose telephone number is (571)270-3081. The examiner can normally be reached on Mon-Thurs.

Art Unit: 3732

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cris Rodriguez can be reached on 571-272-4964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Heidi Eide
Examiner
Art Unit 3732

/Heidi M Eide/
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10/15/2009

/Cris L. Rodriguez/
Supervisory Patent Examiner, Art Unit 3732